ABSTRACT OF THE DISCLOSURE

A data processing apparatus and method are provided for transferring data values between a register file and a memory. The data processing apparatus comprises a data processing unit operable to perform data processing operations on data values,

5   and a register file having a plurality of registers operable to store the data values for access by the data processing unit. The data processing unit is responsive to a single transfer instruction to perform multiple data value transfers between a corresponding multiple of the registers of the register file and consecutive data value addresses in a memory. The single transfer instruction provides an address identifier from which the

10   consecutive data value addresses are derivable, and further provides for each of the data value transfers a register identifier identifying the register within the plurality of registers which is the subject of that data value transfer. Furthermore, the register identifier for each of the data value transfers is specifiable independently of the register identifiers specified for the other of the data value transfers, thus providing

15   significantly enhanced flexibility of use of this single transfer instruction.

(Fig. 1)